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Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro
    370                 375                 380

Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu
385                 390                 395                 400

Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro
                405                 410                 415

Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys
            420                 425                 430

Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys
        435                 440                 445

Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His
    450                 455                 460

Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser
465                 470                 475                 480

Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr
                485                 490                 495

Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp
            500                 505                 510

Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala
        515                 520                 525

Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu
    530                 535                 540

Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys
545                 550                 555                 560

Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val
                565                 570                 575

Ala Ala Ser Gln Ala Ala Leu Gly Leu
            580                 585
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1. A method of enhancing transfection efficiency or viability of a cell during transfection, said method comprising:

a) transfecting a cell with a nucleic acid molecule in a cell culture media supplemented with a plant-produced recombinant mammalian transferrin related protein, wherein said transfection efficiency or cell viability is enhanced relative to a culture without said plant-produced recombinant mammalian transferrin related protein supplement.

2. The method of claim **1**, wherein said transfecting comprises culturing said cell with said nucleic acid molecule in said cell culture media, wherein the plant-produced recombinant mammalian transferrin related protein supplement is added to the cell culture media prior to, during, or immediately after transfection.

3. The method of claim **1**, wherein said nucleic acid molecule comprises a nucleotide sequence encoding a protein of interest.

4. The method of claim **3**, wherein said protein of interest is a therapeutic protein or an antibody.

5. The method of claim **3**, wherein said enhanced transfection efficiency comprises higher yield of said protein of interest expressed in said cell.

6. The method of claim **3**, wherein said nucleic acid molecule comprises an expression vector, in which the nucleotide sequence encoding for the protein of interest is operably linked to an expression control sequence for constitutive or inducible expression in said cell.

7. The method of claim **1**, wherein said cell culture media comprises at least one additional protein selected from the group consisting of albumin, growth factors, lactoferrin, insulin, growth hormone, fibronectin attachment factor, lamin attachment factor, collagenase, platelet derived growth factor, brain-derived neurotrophic factor, glial-derived neurotrophic factor, thymic factors, haptocorin, lactahedrin, lactoperoxidase, alpha-fetoprotein, immunoglobin, and alpha-lactalbumin.

8. The method of claim **7**, wherein said at least one additional protein is a plant-produced recombinant protein.

9. The method of claim **8**, wherein said at least one additional protein is plant-produced recombinant albumin having less than about 1 EU of endotoxin/mg of albumin and less than about 2% aggregated albumin.

10. The method of claim **9**, wherein the supplement comprises a ratio (wt/wt) of transferrin related protein to albumin of about 1 to 5000, to about 1 to 0.5.

11. The method of claim **1**, wherein the cell culture media is a serum-free media.

12. The method of claim **1**, wherein the transferrin related protein is lactoferrin or transferrin.

13. The method of claim **1**, wherein said cell is a B-cell, T cell, stem cell, hybridoma, human embryonic kidney line,